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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,903	02/20/2004	A. Farid Issaq	ACT-390	6148
28661 7590 01/10/2008 SIERRA PATENT GROUP, LTD. 1663 Hwy 395, Suite 201 Minden, NV 89423			EXAMINER NADAV, ORI	
			ART UNIT 2811	PAPER NUMBER
			MAIL DATE 01/10/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/784,903

Applicant(s)

ISSAQ ET AL.

Examiner

Ori Nadav

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-35, 40 and 42-46 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-34 is/are allowed.
- 6) ☒ Claim(s) 40 and 42-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/19/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40 and 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forbes (6,674,667) in view of Magel et al. (5,412,593).

Regarding claim 40, Forbes teaches a method for programming and erasing a reprogrammable metal-to-metal antifuse, comprising:

programming said antifuse by applying a programming potential across said antifuse to cause a programming current to flow through said antifuse until its resistance substantially decreases (figure 6 and related text);

erasing said antifuse by applying an erasing potential across said antifuse, said erasing potential being lower in magnitude than said programming potential and causing an erase current to flow through said antifuse, and

reprogramming said antifuse by applying a programming potential across said antifuse to cause a programming current to flow through said antifuse until its resistance substantially decreases (inherent), wherein said erasing step is successful if said antifuse has been returned to a high-resistance state (inherent).

Forbes does not teach using the method in a metal-to-metal antifuse, and does not explicitly state that reprogramming said antifuse occurs after said erasing step is successful.

Magel et al. teach a method for programming a reprogrammable metal-to-metal antifuse.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Forbes's method for programming in a metal-to-metal antifuse, and to reprogram Forbes's antifuse after said erasing step is successful in order to use the device in an application which requires metal-to-metal antifuse and in order to obtain the correct information when reprogramming, respectively.

Regarding claims 43 and 46, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include soaking said antifuse by passing a soak-current through said antifuse, and applying a potential having a more negative value above said antifuse material layer, in prior art's device in order to operate the device in its intended use.

Regarding claims 42 and 44-46, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a programming current in a range of between about 0.1 to about 1mA, wherein said soak-current has a magnitude of about 5mA, wherein said programming current is less than about 1mA and a ratio of said erase current to said programming current is about 10:1, and wherein a ratio of said

erase current to said soak current is about 3:1 in prior art's device in order to optimize the device operation.

Allowable Subject Matter

Claims 1 and 3-34 are allowed.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-34, 40 and 42-46 have been considered but are moot in view of the new ground(s) of rejection to claims 40 and 42-46 and the allowance of claims 1 and 3-34.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ori Nadav whose telephone number is 571-272-1660. The examiner can normally be reached between the hours of 7 AM to 4 PM (Eastern Standard Time) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on 571-272-4670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'ORI NADAV', is positioned above the printed name.

O.N.
1/6/08

ORI NADAV
PRIMARY EXAMINER
TECHNOLOGY CENTER 2800